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# Trends in Ethnic Educational Inequalities in the Netherlands: A Cohort Design

Jochem Tolsma, Marcel Coenders and Marcel Lubbers

This study examines ethnic educational inequality in the Netherlands, focusing on changes over cohorts in highest educational level and school transitions for the four largest ethnic groups compared with Dutch natives. The maximum maintained inequality (MMI) and the effectively maintained inequality (EMI) propositions are used to predict ethnic educational differentials, using data from the Dutch immigrant surveys. We show that ethnic educational inequality is maximally maintained at the highest educational levels. After elementary school, ethnic minorities are more likely to choose the lower tracks but they do not differ in their choices between vocational and general tracks at the secondary level. If they succeed in passing higher general secondary education, they are less likely than Dutch natives to continue their school career, and university becomes more exclusively the domain of the native Dutch. These ethnic educational differences are not accounted for by disadvantaged socioeconomic background. In a country where class-based and gender-based educational inequality has decreased over time, ethnic-based educational inequality remains very apparent.

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## Introduction

With growing numbers of immigrants throughout Western Europe, research on the influence of ethnicity on achievement is likely to attract greater attention. Previous research on ethnic stratification in the Dutch educational system has revealed that ethnic minorities perform worse than the native population on several indicators of school success and that inequality arises at different stages in the educational career. It takes ethnic minorities longer to finish elementary school, and both performance levels as well as success rates are lower at different tracks and different levels of the educational system (Wolbers and Driessen, 1996; Tesser and Iedema, 2001; Dagevos *et al.*, 2003; Kalmijn and Kraaykamp, 2003; Oomens *et al.*, 2003; Gijsberts, 2004; Statistics Netherlands, 2005a).

Ethnic inequality of educational opportunities (IEO) has also been observed in, among other countries, Germany (Alba *et al.*, 1994), France (Vallet and Caille, 1996), Israel (Ayalon and Shavit, 2004), and the United States (Glick and White, 2003). However, ethnic IEO takes different forms in different countries. In Germany, for example, ethnic inequalities in the school system remain after controlling for socio-demographic characteristics whereas they generally disappear in France when such factors are controlled for.

The focus of this contribution is on *trends* in ethnic IEO. The Netherlands is an interesting case of such trends for three reasons. First, qualitatively tracked educational systems, such as those of the Netherlands, offer the opportunity to describe and explain ethnic IEO both qualitatively and quantitatively.

Raftery's effectively maintained inequality (EMI) proposition (Raftery and Hout, 1993) states that whenever inequality cannot be maintained quantitatively between educational levels, the basis for differentiation shifts to the qualitative nature of educational tracks. This proposition has not been tested in the context of ethnicity-based educational inequality. Second, in a comparison of 13 countries, Shavit and Blossfeld (1993) found that the effects of social origin on educational opportunity were stable over time for each transition in 11 countries but not in the Netherlands and Sweden. It is therefore interesting to see whether educational stratification based on social classes or gender has been replaced by stratification based on ethnicity in the Netherlands. Third, with the present data on the Netherlands, it is possible to compare birth cohort trends within and between the 1st and 2nd generation migrants. Glick and White (2003) have shown that it is important to disentangle those trends, as they turned out to be different for generations in the United States.

It has been reported that the educational disadvantage of ethnic minorities is decreasing in the Netherlands (Tesser, 1995; Gijsberts, 2004; Statistics Netherlands, 2005), but we identify weaknesses in these studies—they focus on percentage change rather than net associations, or they aggregate educational levels and neglect the tracked nature of the Dutch educational system (as between vocational and general educational tracks). Other Dutch studies report that programmes designed to increase the educational achievements of disadvantaged ethnic minority pupils have hardly had effect (Mulder, 1996; Driessen, 2000).

The final level of completed education is a summary measure of educational inequality. In this contribution we, therefore, first describe birth cohort trends in final educational attainment for Turks, Moroccans, Surinamese, and Antilleans, the four major ethnic minority groups in the Netherlands, and compare these to the native Dutch. Together these ethnic minority groups form 7 percent of the current Dutch population (Statistics Netherlands, 2005b). Our first research question reads: (1) *What are the birth cohort trends in ethnic differences in final educational attainment?*

A student's highest attained educational level is determined by the decisions that have to be made at different branching points during the educational career. Ethnicity may affect all these different decisions. Several studies focused on the different dropout rates (or downward mobility rates) across ethnic groups (Kalmijn and Kraaykamp, 1996; Statistics Netherlands, 2005a), but until now the trends in the decisions that

have to be made at the different branching points during the school career once a previous level has been completed successfully have hardly received any attention, although this would link the scholarship of ethnic educational inequality to the current literature on class-based educational inequality. We will examine ethnic differentials in educational decisions at two different points in the school career: after elementary school and after higher general secondary education. We formulate the second research question as: (2) *What are the birth cohort trends across ethnic groups, both within and between generational statuses, in the decisions at successive school transitions?*

That social class is a strong determinant of educational achievement is well established in social stratification research (Shavit and Blossfeld, 1993; De Graaf and Luijkx, 1995; Dronkers and Ultee, 1995; Rijken, 1999) and is observed also within ethnic minorities (Wolbers and Driessen, 1996). Most immigrant groups have a less favourable class background than that of the native population, and this could well confound the associations between ethnicity and educational opportunities. In most Western societies including the Netherlands, men and women have roughly the same average years of education completed (Rijken, 1999), but gender differences in educational achievement are more pronounced for ethnic minorities (Dagevos *et al.*, 2003). The gender composition of the ethnic minority groups has become more equal over time (Statistics Netherlands, 2005c). Until now, the trends in the effects of ethnicity on achieved educational level and educational transitions controlled for gender and social background have remained unclear in the Netherlands. The debate over the persistent existence of an 'ethnic penalty' has not been settled yet. Our final research question is: (3) *To what extent do parental background and the gender composition of ethnic groups explain (trends in) ethnic inequality in school careers?*

We aim to contribute to the scientific literature in several ways. A detailed description of the trends in final educational attainment and educational transitions both across and within ethnic generations in which educational levels and (vocational and general) tracks are disaggregated and net associations are modelled is missing in the Netherlands and is rare elsewhere. We aim to fill this gap. Furthermore, we aim to explain educational transition decisions for different birth cohorts at different branching points in the educational career. In doing so, we link the scholarship of ethnic educational inequality to the current literature on class-based educational inequality. Moreover, we aim to contribute in the

discussion on maximum maintained inequality (MMI) and EMI, and test their propositions in a multi-ethnic context.

## The Dutch Educational System

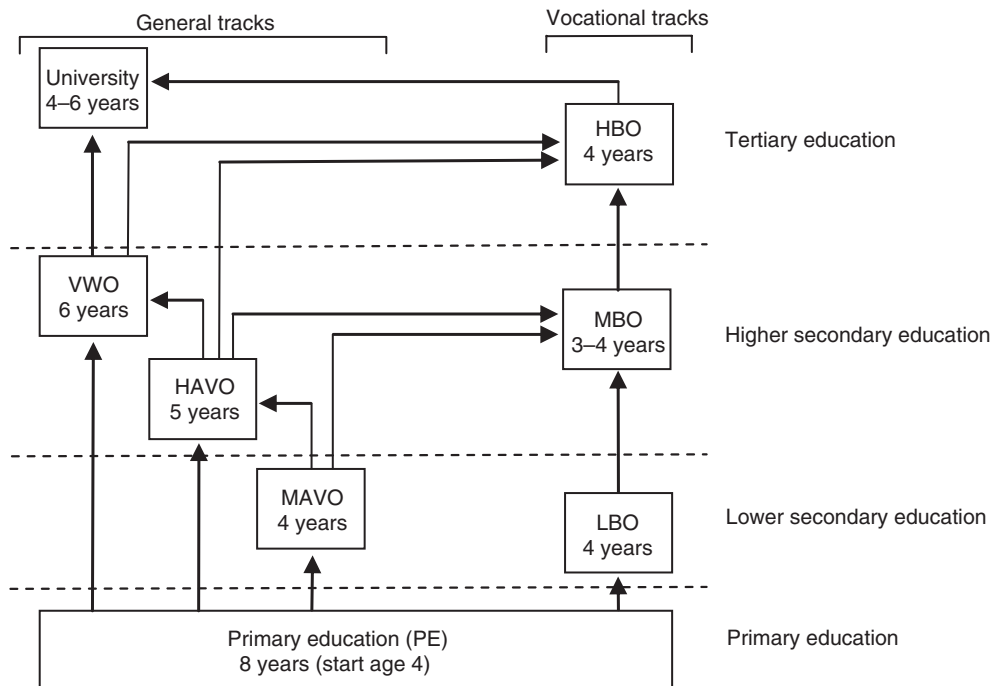
The many decision points and the different routes to a particular level of education are characteristic of the Dutch educational system. Until 1999, Dutch students could choose between four different educational tracks after they completed primary school (Figure 1). A decision had to be made whether to start a vocational education (LBO) or to continue general education at a low, medium or high level (MAVO, HAVO, VWO, respectively). One may also start a vocational track at a later point in the educational career; after having finished a general education. Tertiary education consists both of higher vocational education (HBO) and university. The vocational track is regarded as the less selective track compared to the general track. Full-time education is obligatory for students aged between 4 and 16 years. Students aged between 16 and 18 years are only partially obliged to follow an education. We would like to point out that only the 2nd generation

immigrants have been subject to the complete Dutch educational system.

## Expectations

### Modernization Thesis

Modernization theory proposes that the economies and concomitant occupational structures of modern, industrialized countries will come to dictate selection processes based on achieved characteristics of individuals. Selection processes present in the educational system or on the labour market that are based on ascribed characteristics such as social origin, gender, and ethnicity will turn out to be economically inefficient (Blau and Duncan, 1967). This trend from ascription to achievement, which is driven by the economy, is also accompanied by a change in values (Parsons, 1951), such that ascribed characteristics not only *could not*, but also *should not* play an important role in selection processes. However, comparative research has shown that with respect to educational opportunities meritocratization is not a universal process among modernized countries (Shavit and Blossfeld, 1993). In the Netherlands, the importance



**Figure 1** The Dutch educational system (until 1999)

of social class in educational attainment did decrease (De Graaf and Luijkx, 1995), but the Netherlands and Sweden seem to be exceptional cases in this respect. Moreover, gender has also become a less decisive determinant of educational attainment for the native Dutch (Van der Lippe and Van Doorne-Huiskes, 1995). Based on the possibility that the Netherlands is becoming more meritocratic with regard to the ascribed characteristics of social origin and gender, we deduce a *modernization hypothesis: Ethnic inequality in the educational system will decrease at all levels and for all tracks.*

### Maximally Maintained Inequality (MMI)

Raftery and Hout (1993) propose that at times of educational expansion, educational inequality will decrease only at educational levels where enrolment of the elite stratum has been saturated. At levels where enrolment is not universal, the elite social stratum will profit more from educational expansion than the less privileged, and increase their attendance rates faster. This is known as the MMI proposition.

The Netherlands have experienced a period of educational expansion in recent decades. Although almost everyone now continues in school after primary education, even in 1999, 'only' 42 percent of the native Dutch pupils who completed primary school enrolled in the highest levels of secondary education (ROA, 2002; Statistics Netherlands, 2005a). According to the MMI proposition, it is (and was) therefore still possible to maintain inequality within secondary education. In contrast, since approximately 90 percent of the native Dutch students who successfully finish the highest general levels of secondary education enroll in tertiary education, the tertiary level can be regarded as saturated for those who finish higher secondary education. We, therefore, deduce that: *Ethnic inequality will be maintained within secondary education. And: Between students who successfully completed higher general secondary education in the Netherlands, ethnic inequality will decrease.* Note that the first MMI hypothesis contradicts the modernization hypothesis.

### Effectively Maintained Inequality (EMI)

The educational levels in the Dutch educational system (Figure 1) are differentiated into vocational and general tracks. After primary education and higher general secondary education, students may choose to continue education either at a vocational or a general track. The MMI proposition ignores the fact that educational systems may be tracked. In Lucas' hypotheses of EMI (Lucas, 2001) it is argued that

once saturation has been reached at a given educational level, inequalities of attaining that level may be replaced by inequalities in enrolment in the more selective track. The more selective tracks in the Netherlands are the general tracks. As stated earlier, we only regard the tertiary level as saturated. This leads to the following *EMI hypothesis: At the tertiary educational level, ethnic inequality will have decreased for the less selective vocational track and have increased for the more selective general track.*

### Parental Background and Gender

The influence of social origin on educational achievement has diminished in the Netherlands over time. However, social origin is still a strong predictor of educational outcomes, even for native Dutch. The ethnic minorities investigated in this contribution have in general a lower social background than the native population. We therefore pose in a *social origin hypothesis* that: *Ethnic IEO will decrease when we control for parental education and father's job status.* We will assess whether or not ethnic inequality disappears after we control for these social origin characteristics, as in France (Vallet and Caille, 1996), but not Germany (Alba *et al.*, 1994).

Gender differentials in educational opportunities are still present in the Dutch society (Need and de Jong, 2000), even though, as stated earlier, gender is becoming a less decisive determinant for educational attainment among the native Dutch (Van der Lippe and Van Doorne-Huiskes, 1995). Although gender differentials in education are more pronounced for ethnic minority groups than for native Dutch, there are also indications that the emancipation process in the Dutch educational system for some ethnic minority groups is taking place at a different (i.e. faster) pace than for the native Dutch (Gijsberts, 2004). We formulate the following *gender hypotheses*: (a) *Gender based IEO within ethnic groups is decreasing.* And (b): *The gender emancipation process in the educational system is taking place at a faster rate for ethnic minority groups than for the native Dutch.*

### Generational Status

Successive birth cohorts of 1st generation immigrants may differ in their educational attainment due to changing selective migration and educational processes in the country of origin. In the 1960s and 1970s, the Netherlands was in need of low-educated manual workers and recruited male guest workers from countries such as Morocco and Turkey. These people

were relatively less educated not only as compared to native Dutch but also to Moroccans and Turks in the origin country. In the 1970s, the Turks and Moroccans reunited with their (low educated) family members. In the 1980s, a new type of migration could be observed; young (1st and 2nd generation) migrants chose to marry a partner from their respective origin country. These partners originated from the same rural agricultural areas and villages as the initial migrants, and are therefore probably relatively less educated as well. As a consequence, throughout the years, predominantly relatively less educated Turks and Moroccans migrated to the Netherlands. However, the adult literacy rates for men and women in Turkey and Morocco have risen sharply in the last decades (UNESCO, various years). But they are still relatively low compared to the literacy rates of the other ethnic groups under consideration in this contribution. Since primary education is saturated in the Netherlands, we pose that: *The educational inequality at the lowest educational levels (i.e. no education and primary education) will have diminished between 1st generation Turks and Moroccans and Moroccans and Turks of 2nd generational status.* On the other hand, due to the continuous (self)selection of relatively less educated Turks and Moroccans, we also expect that: *For Moroccans and Turks, ethnic educational inequality at educational levels higher than primary education will be maintained between generational statuses and native Dutch.*

Up to the 1960s, migration from Surinam to the Dutch mother country was low, but those who migrated were mostly students and the highly educated. During the transitional period towards independence, more Surinamese migrated to the Netherlands, among whom lesser educated Surinamese were more prevalent. The economic crises in Surinam at the end of the 80s caused to increase especially the migration of the relatively lesser educated. It is difficult to predict the educational achievements of the 1st generation Surinamese in the Netherlands, for relatively less educated Surinamese chose to migrate to the Netherlands at later periods, but at the same time, these relatively less educated Surinamese became better educated due to the general educational expansion in Surinam (UNESCO, various years).

From 1954 and onwards, inhabitants of the islands belonging to the Netherlands Antilles were free to migrate to the mother country. Initially, only students arrived of whom many re-migrated after obtaining a degree. After the 50s, migration from the Antilles is mainly driven by the worsening economic conditions

on the islands. Due to the strong trend towards (self)selective migration favouring the lesser educated we expect that: *The educational achievements of 1st generation Antillean immigrants of subsequent birth cohorts will have decreased compared to Antilleans of 2nd generational status.*

## Survey sample and (in)dependent variables

We used data from the social position, and use of welfare facilities by immigrant surveys (SPVA), waves 1988, 1991, 1994, 1998 and 2002 (Martens *et al.*, 1992; Martens, 1995, 1999; Groeneveld and Weyers-Martens, 2003). The SPVA is a household survey of Turkish, Moroccan, Surinamese, and Antilleans ethnic minorities and a native Dutch reference group, and was conducted in 13 municipalities in the Netherlands—among which Amsterdam, Rotterdam, and The Hague—in which the majority of the Dutch ethnic minority members live. The SPVA contains to a high extent a representative selection of members of the respective ethnic minority groups with regard to age, gender, marital status, and nationality. The SPVA Dutch control group is not a perfect representative selection of native Dutch residents with regard to final educational attainment. Data of the Dutch Labour Force Survey (LFS), collected by Statistics Netherlands in 1991, 1994, 1998, and 2002, were used to reduce this non-representivity.<sup>1</sup>

With regard to the description of the final education levels across ethnic groups, we followed the usual procedure to restrict the sample to respondents who were aged 25 or above at the time of the survey. We thereby did not favour young drop-outs and students who followed a short educational track. In the school transition analyses we only selected respondents who successfully finished their previous educational track. In the school transition analyses we included generational status as an explanatory variable. Since 2nd generation immigrants only became a part of the Dutch society from the 1960s and onwards, we only selected those respondents who were born after 1959.

Final educational attainment was measured in eight categories (0) no education, or did not complete elementary school '<PE', (1) elementary school 'PE', (2) lower vocational 'LBO/VBO', (3) lower general secondary 'MAVO', (4) intermediate vocational secondary 'MBO', (5) intermediate and higher general secondary 'HAVO/VWO', (6) higher vocational tertiary 'HBO', and (7) University 'WO'. We also constructed *school transition* variables based on the



data of the SPVA surveys from 1988, 1991, 1994, and 1998.<sup>2</sup> A person was classified as belonging to an *ethnic minority group* when the respondent himself or either of his parents was born in the origin country. The ethnic minorities who were born in the origin country and immigrated to the Netherlands after the age of 5 were classified as belonging to the 1st generation, those born in the Netherlands or age at immigration younger than 6 to the 2nd generation. Second generation immigrations became a substantive part of the Dutch society from 1960 and onwards. The native Dutch of the SPVA Dutch control group are defined as persons of whom both parents are born in the Netherlands and who themselves were born in the Netherlands. Survey year minus age at the time of survey leads to the year of birth. We defined five birth cohorts: cohort 1: 1917–1936; cohort 2: 1937–1946; cohort 3: 1947–1956; cohort 4: 1957–1966; cohort 5: 1967–1980. We used two indicators for social origin; *parental education* and *father's job status* when the respondent was 15. Parental education is the highest educational level attained by either parent. When we did not have information on both the parents we used the educational level of the parent we had information on. Missing values were substituted with mean scores per ethnic group per survey year. We categorized parental educational levels as (0) primary education (i.e. '<PE' and 'PE'), (1) lower secondary education (i.e. LBO and MAVO), (2) higher secondary education (HAVO, VWO, and MBO), (3) higher professional education (HBO), and (4) University (WO). The prestige of father's job when the respondent was 15 was measured by the occupational prestige scale developed by Ultee and Sixma (1983), which ranges from 13–87. Respondents whose father never had a job received the lowest prestige score on father's job status. If only information was present on father's first job, instead of the job when the respondent was 15, we used this instead. Missing values were substituted with mean scores per ethnic group per survey year. The in- or exclusion of respondents with imputed values during the analyses does not substantively affect our conclusions. Descriptive statistics as well as results to which is referred may be found on the website of this contribution for the interested reader (Tolsma *et al.*, 2006).

## Analyses and Results

### Final Educational Attainment

As the Netherlands have experienced significant educational expansion in the last decades, and since

the ethnic groups that are being analysed in this contribution have a different age composition, the description of trends in ethnic IEO calls for a cohort design. The cell frequencies of the three-way ethnicity by cohort by final educational attainment table (Tolsma *et al.*, 2006) are a function of the main effects of ethnic group (E), final educational attainment (S, for Schooling), and birth Cohort (C). Log-linear models are ideal to estimate and describe associations between nominal variables free of the marginal distributions and changes in these distributions over time.

First we assess whether it is necessary to include specific 'Ethnicity by Schooling' associations to estimate the observed frequencies in our table. In order to do this we start with a baseline model (Model 1). This baseline model is the saturated model *without* the parameters of interest. The baseline model, therefore, does not contain the 2nd order interactions of 'Ethnicity by Schooling' (ES) and the 3rd order parameters modelling birth cohort trends in the 'Ethnicity by Schooling' interaction [i.e. 'Ethnicity by Schooling by Cohort' (ESC)]. The less parsimonious Model 2 includes all (non-redundant) 'Ethnicity by Schooling' interaction parameters. These parameters have the same properties as odds ratios, and therefore show whether certain ethnic minority groups are positively or negatively associated to specific educational levels.

Next we test whether 'Ethnicity by Schooling' associations changed over the specified birth cohorts in a linear fashion. In order to do this we add in Model 3, three-way interaction parameters; 'ESC(1)'. The only difference between the saturated model and Model 3 is that in the latter there is only one linear 'Ethnicity by Schooling by Cohort' trend parameter for each 'Ethnicity by Schooling' association, hence ESC(1). In contrast, the saturated model includes parameters for every specified cohort and each 'Ethnic group by Schooling' association. The 3rd order parameters of the saturated model (i.e. the ESC parameters) tell us whether an 'Ethnicity by Schooling' association that belongs to a specific birth cohort deviates from the mean (over birth cohorts) 'Ethnicity by Schooling' association.<sup>3</sup>

We use the BIC statistic as the criterion for model selection. The BIC statistic may be considered as a likelihood ratio (L) corrected for sample size and the number of degree of freedom (df) used. Parsimonious models are preferred above less parsimonious models. The restricted model with the lowest BIC value describes the data best given the degree of freedom it

**Table 1** Goodness-of-fit statistics for log-linear models that test the associations between ethnicity and educational attainment

	LL	df	P	BIC
M1. Baseline (=E S C EC SC)	17,417	140	0.0	15,963
M2. Baseline + ES	572	112	0.0	−591
M3. M2 + ESC(1)	<b>214</b>	<b>84</b>	<b>0.0</b>	<b>−658</b>

Notes:  $N=32,322$  (Dutch weighted).

E, main effect of Ethnicity; S, main effect of completed level of education/schooling; C, main effect of cohort; ES, association between Ethnicity and Schooling; ESC(1), linear trend over cohorts of ES. The preferred model is in bold face.

Source: SPVA, 1988, 1991, 1994, 1998, and 2002.

**Table 2** Parameters estimates of Model 3 representing the association between ethnicity and final educational attainment and changes therein (baseline parameters not shown)

		Primary		Lower secondary		Higher secondary		Tertiary	
		<PE	PE	Vocational VBO	General MAVO	Vocational MBO	General HAVO/VWO	Vocational HBO	University WO
Turks	ES	4.8*	1.9*	−1.3*	<b>0.3*</b>	−1.9*	<b>0.2*</b>	−2.0*	−1.9*
	ESC(1)	−1.2*	−0.5*	0.9*	<b>0.6*</b>	0.4*	−0.1	0.0	−0.1
Moroccan	ES	5.7*	<b>1.3*</b>	−1.5*	−0.1	−2.6*	0.2*	−1.8*	−1.2*
	ESC(1)	−1.4*	0.0	1.1*	0.1	1.5*	−0.9*	−0.2	−0.2
Surinamese	ES	<b>2.9*</b>	<b>0.5*</b>	−0.7*	<b>0.7*</b>	−1.3*	−0.2*	−0.8*	−1.1*
	ESC(1)	−0.3	<b>0.2*</b>	0.9*	0.2	0.1	0.3	−1.0*	−0.5*
Antilleans	ES	<b>2.5*</b>	<b>0.3*</b>	−0.3*	<b>0.3*</b>	−1.3*	0.2*	−0.8*	−0.8*
	ESC(1)	0.6	0.1	0.3*	−0.1	0.1*	−0.4*	−0.4*	−0.2*
Dutch (ref)	ES	—	—	—	—	—	—	—	—
	ESC(1)	—	—	—	—	—	—	—	—

Notes:  $N=32,322$  (Dutch weighted).

ES, association between Ethnicity and Schooling; ESC(1), linear trend over cohorts of ES.

Italics: trend towards equality.

Bold face: persistent inequality.

Normal font: equality.

\* $P<0.10$ .

Source: SPVA, 1988, 1991, 1994, 1998, and 2002.

uses. Saturated models have a BIC value of zero. We have summarized the BIC values in Table 1.

The addition of parameters that represent the associations between ethnicity and final educational attainment (Model 2), and the addition of a linear trend in these associations (Model 3) are in both cases improvements to the baseline model 1 (Table 1). Model 3 is the preferred model, according to the BIC statistic. We, therefore, reach the conclusion that at specific educational levels, ethnic specific over- and under-representation exist and that trends in final educational attainment levels differ across ethnic groups. The associations between ethnicity and educational achievement have, in general, been altered in a linear fashion.

The estimates of the relevant parameters are presented in Table 2.<sup>4</sup> Positive ‘Ethnicity by Schooling’ associations, or ES parameters, refer to an over-representation for an ethnic minority group at this educational level, compared to the association of native Dutch with this level. Significant ESC(1) parameters with opposite signs as the significant ES parameters indicate that the association has more closely come to resemble the Dutch association. We italicized these parameters. Parameters that reflect a (significant) persistent inequality are in bold face.

All three theories predict that at the primary levels, inequality should decrease across ethnic groups in the Netherlands. We see that the over-representation for Turks and Moroccans at the ‘no-education level’



and the over-representation for Turks at the primary elementary level indeed decreased (Table 2). For example, the ESC(1) parameters for Turks for the educational levels '<PE' and 'PE' are -1.2 and -0.5 and significant. The Turks and Moroccans of 1st generational status are responsible for this trend (Tolsma *et al.*, 2006). For Surinamese and Antilleans we do not see a trend towards equality. At these educational levels trends are dominated by 1st generation over 2nd generation immigrants (Tolsma *et al.*, 2006). We conclude that self-selective migration of the lowly educated offsets the positive effects of educational expansion in Suriname and the Antilles.

At the tertiary educational levels, educational inequality between native Dutch and Turks and Moroccans remained stable and increased between native Dutch and Surinamese and Antilleans. More difficult to interpret are the parameters for the secondary educational levels. Secondary general education does not seem the culmination of the educational career for native Dutch. The over-representation of some ethnic minority groups at these secondary levels is not the result of native Dutch not reaching these levels, but more likely of ethnic minorities not enrolling in or succeeding at the tertiary level. However, we see two interesting phenomena. First of all, for both the lower secondary level and the higher secondary level, we see that there is a clear distinction between parameters of the vocational track and the general track. This stresses the importance to distinguish between qualitative and quantitative inequality when describing ethnic educational inequality. Secondly, we see that at the lower secondary level the less-selective vocational track (LBO) is gaining in importance compared to the lower general track (MAVO); the ESC(1) parameter for LBO is larger than this parameter for MAVO for all ethnic minority groups.

From our results we conclude that there are two reasons not to collapse educational categories when assessing educational inequality across ethnic groups. First, trends at the primary level will probably dominate trends at higher levels, since ethnic minority groups are strongly over-represented at these lower categories. Secondly, trends are different for vocational and general tracks at the secondary level. Contrary to the previous studies in the Netherlands, our results do not confirm the general statement that ethnic inequality with regard to final educational attainment has decreased.

### School transitions

We analysed two school career transition points to shed light on the process of the formation of ethnic

IEO, and to more rigorously test the EMI and MMI propositions. The first branching point we analysed takes place after the completion of elementary school. At this point, pupils may choose between four different educational tracks. For simplicity reasons, we assumed this to be a decision whether or not to continue the school career at a higher general level (HAVO/VWO), at a relatively lower general level (MAVO), or at a relatively lower vocational level (LBO). Leaving the school system is officially only an option for those who have not been subjected to the Dutch obligatory educational system, which has been operational since 1969. However, since we observed a persistent over-representation for the ethnic minority groups at the elementary level, we also assessed whether this is in part due to ethnic minorities who more often than native Dutch leave the educational system after elementary school. The second transition we analysed takes place after finishing higher secondary education (HAVO/VWO). At this stage, pupils may leave the educational system or continue their education at the tertiary level, either at the vocational HBO, or at the university.<sup>5</sup>

Both of these school decision nodes consist of several odds. We estimated the odds simultaneously for each branching point in multinomial logistic regression models. The regression weights regarding the first and second transition are presented as logits in Tables 3 and 4, respectively. In the analyses, we made a distinction between 1st generation immigrants and 2nd generation immigrants and constructed the variable 'Ethnic group by Generation'. Model A (Tables 3 and 4) also includes the trend parameters (i.e. 'Year of birth'\*'Ethnic group by Generation'). We added the variables 'Gender', 'Parental education', and 'Father's job status' in model B to assess the ethnic penalty net of these background variables. In Model C, we accounted for the possibility that changes in educational differentials might be different between men and women and that emancipation processes took place at a different pace for ethnic groups. Results of Model C may be found on the website for the interested reader (Tolsma *et al.*, 2006).

### Transition 1

Leaving the educational system is only a viable option for 1st generation Turks and Moroccans as the 'Ethnic group by Generation' parameters of -4.21 and -3.77 in column 1, Model A show. The chance to leave the educational system for those who followed their education in the Netherlands is low, approximately 2 percent (as estimated by the parameters of our

**Table 3** Multi-nomial logistic regression models of educational choice after primary education, birth cohorts 1960–1985

	Model A						Model B <sup>a</sup>					
	LBO/stop		MAVO/LBO		(HAVO + VWO)/MAVO		LBO/stop		MAVO/LBO		(HAVO + VWO)/MAVO	
	$\beta$	P	$\beta$	P	$\beta$	P	$\beta$	P	$\beta$	P	$\beta$	P
Constant (Dutch = ref.cat.; $N = 2,841$ )	2.97*	0.00	−0.23*	0.00	0.03	0.73	2.57*	0.00	1.28*	0.00	1.49*	0.00
Turks (1st generation; $N = 3,672$ )	−4.21*	0.00	0.62*	0.00	−0.97*	0.00	−4.30*	0.00	1.27*	0.00	−0.33*	0.03
Turks (2nd generation; $N = 1,043$ )	−1.54*	0.00	−0.63*	0.02	−0.31	0.34	−1.36*	0.00	−0.16	0.58	0.21	0.53
Moroccans (1st generation; $N = 2,199$ )	−3.77*	0.00	−0.02	0.91	0.35*	0.03	−4.05*	0.00	0.69*	0.00	0.93*	0.00
Moroccans (2nd generation; $N = 706$ )	−1.60*	0.00	0.57*	0.08	−1.13*	0.00	−1.42*	0.01	1.00*	0.00	−0.46	0.26
Surinamese (1st generation; $N = 2,382$ )	−2.10*	0.00	0.49*	0.00	−1.39*	0.00	−2.15*	0.00	0.78*	0.00	−1.21*	0.00
Surinamese (2nd generation; $N = 1,161$ )	−0.59	0.17	0.33*	0.09	−0.21	0.29	−0.57	0.18	0.44*	0.03	−0.28	0.18
Antilleans (1st generation; $N = 1,637$ )	−1.51*	0.00	−0.12	0.37	−0.29*	0.04	−1.58*	0.00	−0.02	0.89	−0.21	0.17
Antilleans (2nd generation; $N = 578$ )	−0.84	0.16	0.67*	0.01	0.71*	0.00	−0.98*	0.09	0.62*	0.02	0.43*	0.06
Cohort (Birth year 1960 = 0) <sup>b</sup>	−1.02*	0.00	0.41*	0.00	0.12	0.12	−1.22*	0.00	0.29*	0.00	−0.01	0.87
C*Turks (1st generation)	1.82*	0.00	−0.53*	0.00	−0.11	0.42	1.88*	0.00	−0.53*	0.00	0.01	0.92
C*Turks (2nd generation)	0.70*	0.01	0.33*	0.05	−0.42*	0.03	0.67*	0.01	0.43*	0.02	−0.33*	0.08
C*Moroccans (1st generation)	1.67*	0.00	−0.27*	0.04	−1.08*	0.00	1.82*	0.00	−0.24*	0.08	−0.89*	0.00
C*Moroccans (2nd generation)	0.76*	0.01	−0.32*	0.10	−0.04	0.84	0.75*	0.02	−0.17	0.39	0.02	0.95
C*Surinamese (1st generation)	1.54*	0.00	−0.52*	0.00	0.29*	0.03	1.65*	0.00	−0.52*	0.00	0.31*	0.02
C*Surinamese (2nd generation)	0.44	0.11	−0.12	0.39	−0.28*	0.04	0.53*	0.06	−0.04	0.80	−0.14	0.32
C*Antilleans (1st generation)	0.86*	0.00	−0.21	0.11	−0.09	0.49	0.97*	0.00	−0.08	0.54	−0.01	0.96
C*Antilleans (2nd generation)	0.79*	0.05	−0.36*	0.07	−0.53*	0.00	0.96*	0.01	−0.25	0.19	−0.35*	0.04
Male (female = ref. cat.)							0.86*	0.00	−0.43*	0.00	0.16*	0.05
Parental education (university = ref. cat.)												
Primary							−0.17	0.77	−1.74*	0.00	−1.95*	0.00
Lower secondary							0.28	0.63	−1.42*	0.00	−1.56*	0.00
Higher secondary							0.21	0.73	−1.18*	0.00	−1.45*	0.00
Tertiary vocational							−0.36	0.56	−0.47	0.14	−0.79*	0.00
Father's job status (status 32 = 0) <sup>b</sup>							−0.09*	0.00	0.13*	0.00	0.09*	0.02
Cox and Snell	0.19						0.28					
−2LL	28,361	df = 51					26,280	df = 90				
$\Delta - 2LL$	3,317						2,081					

Notes:  $N = 16,219$  (Dutch weighted)<sup>a</sup>Control variables in model: survey year; mean substitution parental education; coding difference in father's job status; mean substitution of father's job status; unemployed father.<sup>b</sup>Parameter \* 10.\* $P < 0.10$ .

Source: SPVA, 1988, 1991, 1994, and 1998.

**Table 4** Multi-nomial logistic regression models of educational choice after higher secondary education, birth cohorts 1960–1980

	Model A				Model B <sup>a</sup>			
	HBO/stopping		University/HBO		HBO/stopping		University/HBO	
	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>
Constant (Dutch = ref. cat.; <i>N</i> = 816)	1.28*	0.00	−0.32*	0.02	0.90*	0.03	0.27	0.41
Turks (1st generation; <i>N</i> = 380)	−2.83*	0.00	0.39	0.29	−2.89*	0.00	0.76*	0.06
Turks (2nd generation; <i>N</i> = 85)	−1.10	0.14	−0.13	0.87	−1.31*	0.09	0.18	0.82
Moroccans (1st generation; <i>N</i> = 185)	−2.71*	0.00	0.67	0.13	−2.88*	0.00	1.12*	0.02
Moroccans (2nd generation; <i>N</i> = 54)	−3.13*	0.02	1.75	0.18	−3.26*	0.03	2.23*	0.10
Surinamese (1st generation; <i>N</i> = 343)	−1.45*	0.00	0.56*	0.04	−1.44*	0.00	0.85*	0.00
Surinamese (2nd generation; <i>N</i> = 218)	−0.51	0.27	0.66*	0.07	−0.61	0.21	0.85*	0.02
Antilleans (1st generation; <i>N</i> = 324)	−0.68*	0.04	0.10	0.72	−0.61*	0.07	0.16	0.57
Antilleans (2nd generation; <i>N</i> = 192)	−1.30*	0.01	0.95*	0.02	−1.46*	0.00	0.87*	0.03
Cohort (Birth year 1960 = 0) <sup>b</sup>	−0.21	0.35	0.50*	0.00	−0.40*	0.10	0.56*	0.00
C*Turks (1st generation)	0.09	0.81	−0.30	0.46	0.19	0.62	−0.16	0.68
C*Turks (2nd generation)	0.35	0.54	−0.55	0.34	0.58	0.33	−0.41	0.49
C*Moroccans (1st generation)	0.88*	0.04	−0.94*	0.04	1.03*	0.02	−0.79*	0.10
C*Moroccans (2nd generation)	1.72*	0.06	−1.17	0.16	1.96*	0.04	−1.12	0.19
C*Surinamese (1st generation)	0.35	0.35	−0.48	0.13	0.38	0.32	−0.57*	0.08
C*Surinamese (2nd generation)	−0.03	0.94	−0.63*	0.05	0.07	0.88	−0.70*	0.04
C*Antilleans (1st generation)	0.60	0.10	−0.72*	0.01	0.54	0.15	−0.69*	0.02
C*Antilleans (2nd generation)	0.66	0.18	−0.50	0.19	0.68	0.17	−0.44	0.26
Male (female = ref. Cat.)					0.21*	0.07	0.47*	0.00
Parental education (university = ref. cat.)								
Primary					−0.29	0.30	−1.01*	0.00
Lower secondary					−0.30	0.26	−0.78*	0.00
Higher secondary					−0.03	0.91	−0.79*	0.00
Tertiary vocational					0.50*	0.08	−0.48*	0.01
Father's job status (status 32 = 0) <sup>b</sup>					−0.06	0.28	0.12*	0.01
Cox & Snell	0.18				0.24			
−2LL	4,276	df = 34			4,090	df = 58		
Δ − 2LL	523				186			

Notes: *N* = 2,589 (Dutch weighted).

<sup>a</sup>Control variables in model: survey year; mean substitution parental education; coding difference in father's job status; mean substitution of father's job status; unemployed father.

<sup>b</sup>Parameter \* 10.

\**P* < 0.10.

Source: SPVA, 1988, 1991, 1994, and 1998.

models). We further observe that the Dutch trend parameter is −1.02. This means that continuing at the lower vocational track has become a less relevant choice compared to the choice to leave the educational system for later generation pupils of Dutch descent. Since the trend parameters for the ethnic minority groups are either positive or non-significant, we conclude that for this specific odd, ethnic educational differentials have diminished. This finding is in line with all the three theoretical frameworks; the modernization thesis, MMI proposition, and the EMI proposition.

Of the older cohorts, only the 2nd generation Turks less often opt to continue at the general level (MAVO) versus the vocational level (LBO), compared to the native Dutch (−0.63). The general track at lower secondary education (MAVO) is gaining in importance compared to the vocational level (LBO) for most ethnic groups. However, in comparison with the native Dutch, this process is less pronounced for 2nd generation Moroccans and Antilleans (their cohort trend interaction parameters are −0.27 and −0.36, respectively). At lower secondary education, inequality

is therefore maintained qualitatively for specific ethnic groups. This clearly refutes the modernization thesis.

Next, we test the MMI hypotheses, which states that inequality is effectively maintained if saturation is not reached. We, therefore, inspect the relative chance to continue at the higher secondary general levels (HAVO/VWO) compared to the chance to continue at the lower secondary general level (MAVO, see column 3, Model A). In sum, all immigrants either experienced a negative trend compared to the native Dutch, or 2nd generation minorities experienced no trend relative to the native Dutch, and ethnic differentials in the transition odds remained stable. This is a clear corroboration of the MMI proposition. For example, the trend interaction parameter for Turks is  $-0.42$  whereas the main effect term, which refers to the trend for native Dutch, is non-significant. The only exception is the 1st generation Surinamese, but they will need approximately five decades to overcome their disadvantaged position (i.e.  $1.39/0.29 = 4.8$ ).

Generational status affects the relative chances of the transition after primary education, but not in a clear consistent manner. For example, whereas in 1960 the odds to continue at the MAVO relative to the LBO for 1st and 2nd generation Turks were 1.48 and 0.42, these same odds in 1980 were 1.16 and 1.86, respectively.<sup>6</sup> Differences between generational statuses for this odd remained more or less stable for Moroccans and Antilleans, and favour the 2nd generation immigrants. In general, the chance to continue at the higher secondary general levels (HAVO/VWO) relative to the lower secondary general level (MAVO) decreases faster for immigrants of 2nd generation compared to immigrants of 1st generational status.

In model B, we controlled for gender, parental education, and father's job status. These variables contribute considerably to the model fit (see the likelihood ratio values ( $-2LL$ ) in Table 3). Moreover, these background characteristics explain in part the effects of ethnicity and generational status as we predicted. For example the parameter for 1st generation Turks referring to the transition odd higher secondary general levels (HAVO + VWO) versus lower secondary general level (MAVO) diminished from  $-0.97$  in Model A to  $-0.33$  in Model B. We also see that specific trends in transition odds are for a large part explained by parental background characteristics. This is especially true for the native Dutch. However, more importantly, our conclusions regarding ethnic educational inequality are not influenced by the introduction of these background variables.

Next, we tested whether there are gender differences within ethnic groups and whether birth cohort trends

are different for males and females across ethnic groups (Model C, Tolsma *et al.*, 2006). Our results indicate that only among ethnic minority groups, gender differences exist in the choices after primary education. Predominantly male ethnic minority students opt for the lower vocational track (LBO) compared to the lower general track (MAVO) and more often opt for higher general education (HAVO + VWO) versus lower general education (MAVO). We only detected gender differences in birth cohort trends for 2nd generation Turks and 1st generation Moroccans and Antilleans. Within these ethnic groups, lower general education (MAVO) gains in importance relative to lower vocational education (LBO) faster for men than for women.

## Transition 2

Results of the multinomial logistic regression concerning the transition after higher secondary education are summarized in Table 4. Pupils of Dutch descent continue their educational career more often than the immigrants after higher general secondary education. Only the odd higher vocational (HBO) versus stopping the educational career is shown, however, the redundant odd 'university versus stopping' may be calculated by adding the parameters of Columns 1 and 2. We did not observe significant trends among the ethnic groups in the odd to continue the educational career after higher secondary education at the tertiary level (significance calculated by binary logistic regression). After higher secondary education, ethnic inequality is quantitatively maintained.

The choice for university versus higher vocational education (HBO) was for ethnic minorities of older birth cohorts more popular than for native Dutch. Although only the parameters for the Surinamese and 2nd generation Antilleans (0.56, 0.66, and 0.95, respectively) reach significance, all other ethnic group by generation parameters are positive as well (with the exception of 2nd generation Turks.) In recent years, the choice for university gained in importance (see the main cohort trend parameter of 0.50 in column 2). The ethnic group by generation cohort interaction effects are all negative, although only the interaction parameters of 1st generation Moroccans, 2nd generation Surinamese, and 1st generation Antilleans ( $-0.94$ ,  $-0.63$ , and  $-0.72$ , respectively) reached significance. The non-significance of the trend parameters is possibly due to the relatively small sample sizes per ethnic group. We tentatively conclude that even when, contrary to our expectations, inequality is maintained quantitatively between higher secondary education and

tertiary education, that, within tertiary education, inequality is established qualitatively as well, as predicted by the EMI proposition.

Once again, parental education and gender do contribute to the model fit (Model B). The chance to stop after higher secondary education is lower for students with higher educated parents (Model B). However, the odd to continue at the tertiary vocational level (HBO) versus to stop is higher for students with parents who reached the tertiary vocational level (HBO) themselves compared to students with at least one university graduated parent, this parameter is 0.50. Parents and children strive for avoidance of downward social mobility according to relative risk aversion theory (Goldthorpe, 2000). For students with parents of whom at least one possesses a university degree, both continuing at the tertiary vocational level (HBO), and stopping after higher secondary education (HAVO/VWO) is probably regarded as downward mobility. Father's job status only affects the odd 'university versus HBO'. We observe that male students more often continue their educational career and when they continue it is more often at the university track compared to female students. Surprisingly, differences across ethnic groups are hardly affected by the inclusion of these background characteristics. Model C is not estimated since our sample is relatively small and due to the non-significance of main effects.

## Conclusion

In a detailed description of final educational attainment levels, we showed that ethnic minorities have improved their situation at the lowest educational levels. Also, the under-representation that these groups faced within vocational tracks of secondary education has decreased over the investigated cohorts. However, inequality regarding final educational attainment between the Dutch and ethnic minority groups is maintained at the tertiary level.

The detailed description of patterns of association between attained educational level and ethnicity also showed that (cohort trends in) ethnic inequality takes different forms across vocational and general educational tracks of the same level. It is therefore important to take the qualitatively differentiated structure of educational systems into account when assessing (ethnic) educational differentials. Surprisingly, the distinction between less restrictive vocational tracks and more restrictive general tracks does not play a

major role during explicit track choices after elementary school. For the native Dutch, the general track has gained in importance at the lower secondary level. However, this is also true for two out of four ethnic minority groups who followed their education in the Netherlands. We, therefore, expect that the differences between vocational and general educational tracks will be more evident in drop-out rates than in transition rates.

After elementary school, inequality is maintained between lower secondary education and higher secondary education. Our analyses make clear that the selection processes for secondary education are decisive for ethnic inequality in final education. It might be that migrants themselves as well as teachers underestimate migrants' chances in the educational career. However, at the transition point after higher secondary education, we also see that inequality is maintained. Native Dutch keep continuing their school career after higher secondary education more often than the ethnic minority groups. On top of this, the university track becomes more exclusively the domain of native Dutch compared to the vocational track (HBO). Both transitions therefore establish ethnic educational inequality.

In this contribution, we made a link between the scholarships on class-based educational differentials and the field of ethnic educational inequality. Unfortunately, even in a country where the effects of social class and gender on educational inequality indicators have decreased, a general birth cohort trend towards ethnic educational equality could not be observed. Social origin indicators partly explained the ethnic educational differentials, as we predicted. Better measurements of social position and the inclusion of (language) ability measures may even further reduce the observed ethnic differentials, but for now, our results indicate that ethnic educational inequality is maintained even after controlling for background characteristics. At the primary level, gender differentials are only present among ethnic minority groups. We could not detect a convincing emancipation process among ethnic minority groups.

Generational status affects the decisions made at school transition nodes, albeit not in a consistent way for successive birth cohorts. Later, birth cohorts of 2nd generational status are sometimes even disadvantaged compared to their 1st generation counterparts. The 3rd generation ethnic migrants (or native Dutch with a migrant heritage) are now starting to attend school. Whether the 3rd generation is going to

perform better or worse than their 2nd and 1st generation counterparts remains to be seen. Unfortunately, it is not to be expected that inequality among 2nd generation immigrants and native Dutch will disappear at the secondary and tertiary educational levels for successive birth cohorts.

Clearly, we have to refute the modernization proposition; ethnic educational inequality did not decrease at all levels and all tracks. Within secondary education, inequality is maintained quantitatively as the MMI proposition predicted. Even under a condition of saturation, the trends in ethnic IEO did not diminish between higher secondary education and tertiary education. In line with the EMI proposition, inequality is established qualitatively within tertiary education. Our results should temper the optimism of those who expect ethnic differences to dissolve for later generations or in due time.

## Notes

1. All (Dutch) primary respondents and other household members older than 25 years were weighted to the frequency distribution of respondents of the LFS with the same birth cohort and final educational level. Alters younger than 25 years received the same weighting factor as the primary respondent of the household. Primary respondents of the SPVA younger than 25 years were not weighted (i.e. received a weight '1'), since these age categories are not part of the sample population of the LFS.
2. The SPVA wave of 2002 was excluded from the analysis regarding birth cohort trends in school transition choices due to missing information on the school career.
3. The interpretation of the parameters in a log-linear model depends on the definition of the design matrix. The example shown refers to a simple contrast definition.
4. That all our restricted models deviate significantly from the full model is due to our large sample size. The ES association parameters are robust to model specification [Model 2 versus Model 3 and the saturated model, (Tolsma *et al.*, 2006)]. In the design matrix, the vector ESC(1) has length one. In a design with five cohorts specified, this vector is  $(-0.63; -0.32; 0; 0.32; 0.63)$ . The mean ethnicity-schooling association parameter for educational level '<PE' for Turks who belong to the oldest birth cohort should therefore be corrected with:  $-0.63 * ESC(1) = -0.63 * -1.2 = 0.8$ . The estimated 'Ethnicity by Schooling' association parameter for Turks who belong to the oldest birth cohort is:  $4.8 + 0.8 = 5.6$ .
5. Following Need *et al.* (2000), students who finished the HAVO and continued their school career at the VWO are considered as following the 'university track'. Their decision is regarded as similar to the decision to enrol in the university after completion of the VWO.
6. For first generation Turks born in 1980, this odd is calculated using the formula:  

$$e^{-0.23 + 0.62 + 2*(0.41 - 0.53)}$$

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